

TRACKING SPEED

A Five-Year Pronghorn Study

Story by Ron Wilson, Photos by Craig Bihrlle

Do fences and freeways prevent natural pronghorn migrations? A new study is designed to provide insight into that and other questions about pronghorn movements.



Fences pronghorn are able to sneak under make movement much easier for these far-ranging animals.

A FIVE-YEAR PRONGHORN STUDY WILL STRENGTHEN THE NORTH DAKOTA GAME AND FISH DEPARTMENT'S POSITION AS THE STATE'S AUTHORITY ON A UNIQUE SPECIES THAT IS NEITHER ANTELOPE NOR GOAT.

The study in western North Dakota is in its second year and is designed to identify seasonal home ranges and distribution of adult pronghorn; determine habitat use and preference; and verify survival rates of these animals and how they die. "We are expected to be the source of information in the state regarding this big game species," said Bruce Stillings, Department big game management biologist, Dickinson, who is leading the study. "To do that, we need defensible data regarding pronghorn ecology in North Dakota."

In 2004, 60 adult pronghorn – 40 does and 20 bucks – were captured and radio-collared,

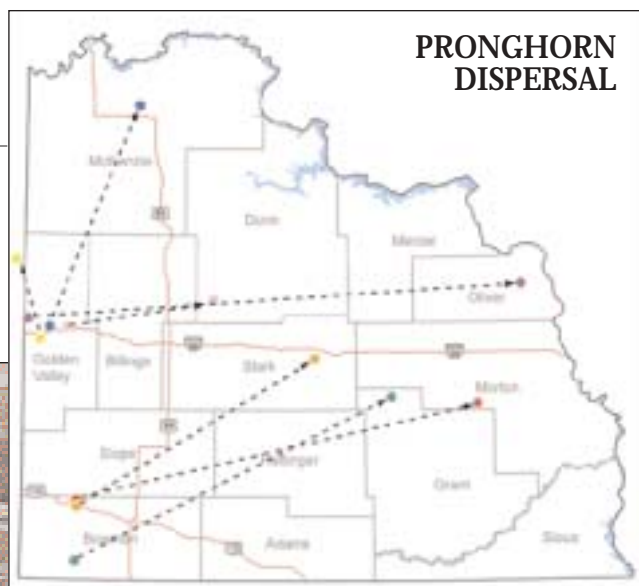
enabling Department biologists to track animal movements approximately every 10 days via aerial telemetry. In January 2005, collars were fitted to additional pronghorn to replace those collared animals that died in 2004.

The life of a collar is about five years, Stillings said, and the idea is to maintain the 40-doe, 20-buck count for the duration of the five-year study. "The study is a long-term commitment, but that's how you answer questions," said Bill Jensen, Department big game management biologist. "You need to get multiple years under your belt."

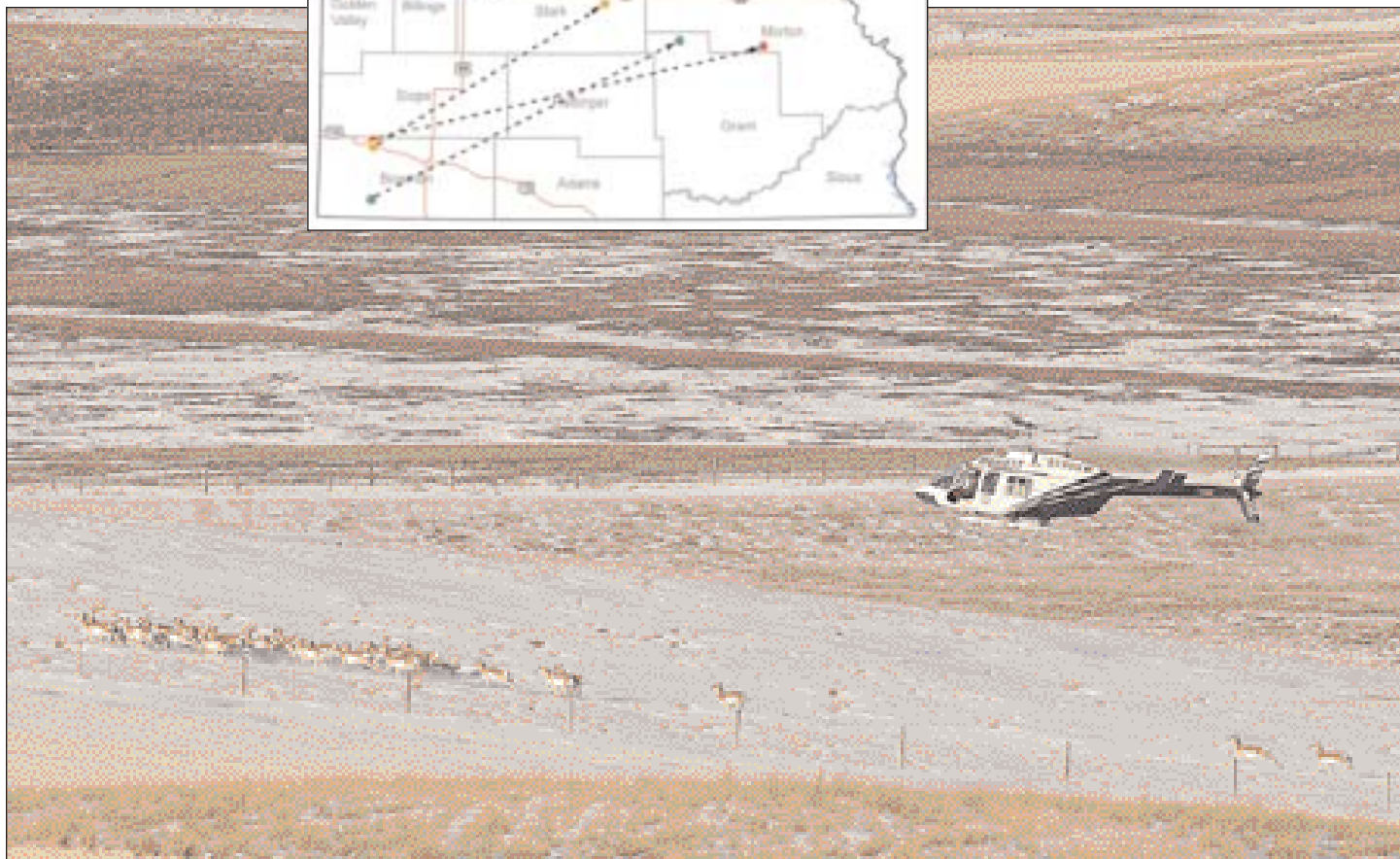
Game and Fish biologists annually survey western North Dakota's pronghorn by airplane, providing insight into how the populations are doing. Yet, when these surveys indicate wide fluctuations in pronghorn numbers between years, a lack of information – causes of mortality or dispersal to other parts of North Dakota or other states, for instance – leaves wildlife managers with only educated guesses to what's going on. "We have made some educated guesses as to their proximate causes – predation, severe winters, poor habitat quality – but we don't have quantitative support for these claims," Stillings said. "Likewise, we don't have the knowledge of the extent to which pronghorn disperse, either permanently or temporarily, between hunting units or between Wyoming, South Dakota and Montana."

Right: Dispersal of radio-collared adult pronghorn males from January 2004 through July 2004.

Below: A helicopter assists in the capturing and collaring of pronghorn in western North Dakota in 2004.



BRIAN HOSEKJESSE KOLAR



The five-year study should help to answer some of what is unknown about these unique animals that are known as much for their speed – they're the fastest North America land animal, maintaining speeds of 30-40 miles per hour for long distances – than anything else.

Findings so far from the study are preliminary, Stillings warns, but the radio-collared pronghorn have provided some interesting information. "They're making much longer movements than we originally thought," he said. "Sometimes, they're making these large treks in less than 10-day periods."

For instance, a 3-year-old buck captured and collared near Beach in Golden Valley County last winter moved more than 130 miles east to the Center area in Oliver County in spring. The buck spent the summer and fall in Oliver County before returning with a group of pronghorn to the southwest in late October. "It's logical to assume that this animal, and others making long-distance movements, were looking for areas where winter forage wasn't covered by snow," Stillings said.

In late October, the 3-year-old buck turned and headed southwest, and was said to be wintering beyond North Dakota's border 4 miles southwest of Baker, Montana. "We currently (January, 2005) have four animals wintering as far as 30 miles into Montana," Stillings said. "It's tough to keep up with some

of these animals because of the big movements they are making."

It was interesting, Stillings said, that the 3-year-old buck, along with most other collared animals, moved long distances in late October well before any winter weather hit.

An even deeper look into the lives of pronghorn in North Dakota will be provided by Global Positioning System collars fitted to some of the animals this winter. "The GPS collars will take a position every seven hours, giving us a better picture on these big movements; help us to understand how they are navigating the country and dealing with barriers; and what kind of habitat they are using throughout the year," Stillings said.

Biologists retrieve a year's worth of information from the GPS collars once they are released from the animals. "If an animal moves 75 miles in 10 days we now only have a V-line understanding of the movement," Stillings said. "GPS collars will show more detail as to locations and speed of movements. They will reveal, for example, whether that 75 miles was a one-day venture or 7.5 miles per day ..."

The project is entirely management-related, Stillings said, as there are a number of things biologists hope to learn to better manage this native big game species.

Home on the Range

The scientific name of pronghorn is *Antilocapra Americana*, meaning "American antelope-goat." This animal is neither antelope nor goat, but the last member of a family that once included dozens of now extinct species. The pronghorn, named for the pronged horn carried by males, is a true living fossil.

North Dakota is the eastern edge of the pronghorn's range. Historical records show that the pronghorn was abundant in the 1800s, ranging statewide. Following the arrival of settlers, and subsequent land-use changes, the population fell to an estimated 225 animals in the 1920s and to about 50 animals in 1940.

By the late 1940s, pronghorn numbers rebounded some in parts of the state and North Dakota held its first hunting season in 1951. This first season was aimed at reducing

COLLARING PRONGHORN

In 2004, North Dakota Game and Fish Department biologists radio-collared 60 pronghorn across the western part of the state. In January 2005, collars were fitted to additional pronghorn to replace animals that died in 2004.

Pronghorn are collared in winter for a number of reasons, said Bruce Stillings, Department big game management biologist. At that time of the year, animals are grouped in wintering herds, giving biologists a large number of animals to sample from. Plus, the cooler temperatures help the pronghorn from overheating, and snow cushions the process that requires some wrestling around with the animals.

"During the capture process, we have select groups identified in a general area and have a specific number of animals we want to collar out of the group," Stillings said. Only a couple animals out of a group are collared in order to spread the sampling of collared pronghorn among as many herds as possible. Plus it minimizes time spent working one herd.

"We keep pursuit (in a helicopter) to less than 5 minutes to ensure animals aren't pushed too hard," Stillings said. "Our number one concern is the welfare of those animals."

Capturing and collaring efforts are held in January, for example, because there are no big game hunting seasons in process in the state. "We don't want this activity to interfere with hunters," Stillings said.

This is some of what Department biologists learned from capturing and collaring efforts in 2004 when 60 pronghorn in western North Dakota were fitted with radio-collars:

Of 28 pronghorn collared in Bowman County, 11 were later located via aerial telemetry in Hettinger, Grant, Morton, Stark and Slope counties – and two nearly 25 miles into Montana. One of the farthest documented movements by a radio-collared animal from January to June in 2004 was a doe that traveled 115 miles as the crow flies. This pronghorn doe was captured just north of Rhame last winter and was located south of New Salem in July.

Photo Omitted

pronghorn numbers in certain areas where animals were above landowner tolerance levels. At the same time, there were large areas of pronghorn range that were completely unoccupied, historical records indicate.

In the early 1950s, the Game and Fish

Department started a program to trap animals from elsewhere and transplant them into areas of the state they had failed to inhabit themselves. From 1953-55, more than 350 pronghorn were captured in Montana and released in North Dakota. By the 1960s,

pronghorn were well distributed through all western counties, and the population estimate in 1964 was 14,000 animals. Four decades later, the population is about 12,000 animals.

Pronghorn Movement

Explorers Lewis and Clark first noted large pronghorn migrations as the animals moved to and from wintering grounds. Back then, however, there was little blocking the paths of animals intent on outrunning deep snows that covered food. Today, movement is hindered by major roadways and some fences, the latter of which pronghorn typically try to go under rather than over. To what extent these obstacles have on pronghorn movement and survival is unknown, but more will likely be learned through the course of the study. “What we’ve seen so far is that Interstate 94 appears to be a major barrier to winter pronghorn movements,” Stillings said. “The fences that line the interstate are tighter, plus the traffic makes for a bigger obstacle for the animals to navigate.”

The study will also shed light on assumptions wildlife managers have long made about pronghorn. “For example, when we do our aerial surveys in July to establish harvest

PRONGHORN MORTALITIES

The following is a look at the pronghorn collared in 2004 as part of the study that have died:

Northern Badlands Management Region

- Number of pronghorn bucks collared – 10
- Number of pronghorn buck deaths – 8
- Causes of death – 2 malnutrition, 5 gun harvest and 1 unknown
- Number of pronghorn does collared – 15
- Number of pronghorn doe deaths – 4
- Causes of death – 1 vehicle collision, 1 gun harvest, 1 old age and 1 malnutrition

Southern Badlands Management Region

(all mortalities occurred in a different management region or Montana)

- Number of pronghorn bucks collared – 4
- Number of pronghorn buck deaths – 4
- Causes of death – 2 gun harvest (1 shot in Montana), 1 malnutrition and 1 unknown
- Number of pronghorn does collared – 10
- Number of pronghorn doe deaths – 1
- Cause of death – Malnutrition

Western Bowman Management Region

- Number of pronghorn bucks collared – 6
- Number of pronghorn buck deaths – 3
- Causes of death – 2 gun harvest and 1 archery harvest
- Number of pronghorn does collared – 15
- Number of pronghorn doe deaths – 2
- Causes of death – 1 fence and 1 shot and left

Pronghorn that died of malnutrition in 2004 were wintering in areas where the snow developed a crust in late winter, making it difficult for the animals to paw through to reach food. Animals that died of malnutrition did so in late March.

No winter related mortalities were documented in the southwestern corner of North Dakota. There wasn’t as much snow in the southwest, and more sagebrush in this region, providing more forage for the animals during the harshest part of the winter.

recommendations for October, you have to wonder whether those animals are still using the same areas during the hunting season.” Stillings said. “Incorporating survival and mortality information from these collared animals with survey data will allow biologists to develop population models. These models will allow biologists to simulate and evaluate various harvest strategies with a computer before actually implementing them. The whole idea is to increase our overall understanding of pronghorn population dynamics to help manage the species in the future.”

Little research has been done on pronghorn in North Dakota over the years, Jensen said. In the 1950s, some work was done concerning the animals’ food habits. In the 1980s, some work was done to evaluate the extent of the pronghorn range in western North Dakota, and in that same decade Department researchers evaluated the use of transect surveys for pronghorn population estimates. “This could be one of the most ignored, in terms of research, big game animals out there,” Jensen said. “For every 20 whitetail research papers published and 10 mule deer papers published, there is one pronghorn research project. This project could answer some of our questions and help manage pronghorn in North Dakota in the future.”

The project headed by Stillings is said to be one of the largest radio-telemetry studies for pronghorn in the nation. He’s received assistance from a number of federal agencies, as well as the cooperation of 100 landowners in western North Dakota where the capture and radio-collaring efforts take place.

While the project is just in its second year, Stillings said they’ve learned some things early on about pronghorn by flying approximately every 10 days to check on their whereabouts. For instance, biologists have witnessed the animals using Conservation Reserve Program acres to some extent, which is somewhat unusual – but important to know – as pronghorn typically prefer much shorter grasses. “We found that they were using CRP fields in both summer and winter,” Stillings said. “Identification of important seasonal habitat uses could provide valuable information toward management.”

Having a better handle on the types of habitat the animals use and when and where they use it will be important to know as development, possibly even coalbed methane development, continues in pronghorn country. “Solid data on pronghorn distribution and seasonal habitat use is critical when providing input on federal management plans concerning drilling locations and mitigation, or commenting on various land-use developments in pronghorn country,” Stillings said.

Pronghorn country has changed over the years and will likely change even more. “We don’t have a prairie ecosystem anymore where pronghorn roamed here and there without obstacles,” Jensen said. “Instead, we have an ecosystem of roads, fences, cattle, oil wells, towns. So the question is: what are these animals doing? That’s something we should find out with this study.”

RON WILSON is editor of *North Dakota OUTDOORS*.

The pronghorn study will document not only how far and in which direction animals travel, but also in what types of habitat they spend their time when they’re not moving anywhere.

On The Move

Pronghorn in western North Dakota are big movers.

Beginning in late March, based on one-year of aerial telemetry data, the general movement pattern for a number of the animals was north/and or east. Some pronghorn traveled 50-100 miles in these directions. By June, most animals settled in to new areas for summer and fall, making small – staying within a 5-by-5-mile area – weekly movements.

By the end of October, many of the radio-collared pronghorn, with some exceptions, moved south/and or west, returning to the areas where they were captured the previous January. Some pronghorn made these shifts in as little as two weeks, while others took a couple months.

This information has already provided biologists insight towards identifying seasonal ranges and explaining changes in pronghorn densities across western North Dakota during a year, said Bruce Stillings, North Dakota Game and Fish Department big game management biologist.

From April through October, radio-collared pronghorn were scattered across much of the western part of the state. From November through January, pronghorn moved in a southwesterly direction and concentrated in much larger groups in southwestern North Dakota, either just north of Interstate 94 or in the extreme southwestern corner of the state.

It seems safe to assume, Stillings said, that these animals will remain in larger herds in their wintering area until late March before once again dispersing for summer.

